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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,231	07/24/2001	Jack Regula	136.1005.01	4335
22883	7590	11/12/2004	EXAMINER	
SWERNOFSKY LAW GROUP PC			KNOLL, CLIFFORD H	
P.O. BOX 390013			ART UNIT	
MOUNTAIN VIEW, CA 94039-0013			PAPER NUMBER	

2112

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,231

Applicant(s)

REGULA ET AL.

Examiner

Clifford H Knoll

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the communication filed 4/12/04. Currently claims 1-42 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

1. *Claims 1-16, 19-35, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Carey (US 6460174).*

Regarding claims 1 and 38, Carey discloses an on-chip communication bus and a plurality of stations that couple on-chip components to the bus (e.g., col. 2, lines 33-36), where each station has a dedicated track which it can use to send information to other stations (e.g., col. 2, lines 29-30).

Regarding claim 2, Carey also discloses packet based communication (e.g., col. 4, lines 40-42).

Regarding claim 3, Carey also discloses an inter-integrated circuit component (e.g., col. 2, lines 36-39).

Regarding claim 4, Carey also discloses an initiator that requests permission to transmit outgoing data over a track to another station and that transmits the outgoing

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data (e.g., col. 5, lines 1-4), an arbiter that evaluates requests and selects a track (e.g., col. 2, lines 52-57), and a target that receives the incoming data (e.g., col. 2, line 40).

Regarding claim 5, Carey also discloses a grant multiplexor for selecting a grant line (e.g., col. 2, lines 52-55).

Regarding claim 6, Carey also discloses plural smaller multiplexors distributed across the chip (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 7, Carey also discloses the arbiter connected a track multiplexor for selecting a track (e.g., col. 2, lines 52-55).

Regarding claim 8, Carey also discloses plural smaller multiplexors distributed (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 9, Carey also discloses a source queue (e.g., Figure 2, "22").

Regarding claim 10, Carey also discloses a first-in-first-out register (e.g., col. 11, line 61).

Regarding claim 11, Carey also discloses a destination queue for incoming data (e.g., Figure 4, "28").

Regarding claim 12, Carey also discloses a first-in-first-out register (e.g., col. 14, line 1).

Regarding claim 13, Carey also discloses a source queue and destination queue (e.g., Figure 2, "22", Figure 4, "28").

Regarding claim 14, Carey also discloses the source and destination queues serve to separate a first clock domain for the on-chip communication bus from a second

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clock domain for one of the plurality of on-chip components (e.g., col. 13, lines 64-67, col. 14, lines 8-9).

Regarding claim 15, Carey also discloses more than one component coupled to the bus through one of the stations (e.g., col. 2, lines 36-39).

Regarding claim 16, Carey also discloses smaller multiplexors distributed (e.g., col. 12, lines 3-4), pipeline storage elements to maintain transmission speed (e.g., col. 9, lines 37-41).

Regarding claim 19, Carey discloses a method of communicating between a plurality of stations coupled to on-chip components, and communicating between stations using an on-chip communication bus (e.g., col. 2, lines 33-36), where each station has a dedicated track which it can use to send information to other stations (e.g., col. 2, lines 29-30).

Regarding claim 20, Carey also discloses packet based communication (e.g., col. 4, lines 40-42).

Regarding claim 21, Carey also discloses an inter-integrated circuit component (e.g., col. 2, lines 36-39).

Regarding claim 22, Carey also discloses sending a request from a first station to a second station, evaluating the request and sending a grant signal (e.g., col. 5, lines 1-4), selecting a track (e.g., col. 2, lines 52-57), sending and receiving the data at the second station (e.g., col. 2, line 40).

Regarding claim 23, Carey also discloses sending the request is performed by an initiator, evaluating is performed by an arbiter at the second station, selecting the track

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is performed by the arbiter at the second station (e.g., col. 5, lines 1-4), sending the data or command is performed by the initiator and receiving the data is performed by a target at the second station (e.g., col. 2, line 40).

Regarding claim 24, Carey also discloses a grant multiplexor for selecting a grant line (e.g., col. 2, lines 52-55).

Regarding claim 25, Carey also discloses plural smaller multiplexors distributed across the chip (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 26, Carey also discloses the arbiter connected a track multiplexor for selecting a track (e.g., col. 2, lines 52-55).

Regarding claim 27, Carey also discloses plural smaller multiplexors distributed (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 28, Carey also discloses a source queue (e.g., Figure 2, "22").

Regarding claim 29, Carey also discloses a first-in-first out register (e.g., col. 11, line 61).

Regarding claim 30, Carey also discloses a destination queue for incoming data (e.g., Figure 4, "28").

Regarding claim 31, Carey also discloses a first-in-first out register (e.g., col. 14, line 1).

Regarding claim 32, Carey also discloses a source queue and destination queue (e.g., Figure 2, "22", Figure 4, "28").

Regarding claim 33, Carey also discloses the source and destination queues serve to separate a first clock domain for the on-chip communication bus from a second

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clock domain for one of the plurality of on-chip components (e.g., col. 13, lines 64-67, col. 14, lines 8-9).

Regarding claim 34, Carey also discloses more than one component coupled to the bus through one of the stations (e.g., col. 2, lines 36-39).

Regarding claim 35, Carey also discloses smaller multiplexors distributed (e.g., col. 12, lines 3-4), pipeline storage elements to maintain transmission speed (e.g., col. 9, lines 37-41).

Regarding claim 39, Carey also discloses a requester circuit for requesting grant, the signal incorporates one of a plurality of priorities (e.g., col. 6, lines 47-49).

Regarding claim 40, Carey also discloses an arbiter circuit for each station capable of receiving a request and granting permission to send information to the station that granted permission over the dedicated track (e.g., col. 2, lines 52-57).

Regarding claim 41, Carey also discloses incorporating a request priority level and the arbiter is capable of granting permission based on the level (e.g., col. 6, lines 47-49).

Regarding claim 42, Carey also discloses the arbiter circuit connected to at least a plurality of stations to receive request signals from the stations of the subset, the subset comprising the station that originated the request signal (e.g., col. 2, lines 49-52).

Claim Rejections - 35 USC § 103

2. *Claims 17-18 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey as applied above in claims 1 and 19, respectively, in view of Adams (US 2001/0042147).*

Regarding claims 17 and 36, Carey fails to disclose a watchdog at each station; however, this watchdog circuit is disclosed by Adams. Adams discloses a watchdog circuit that determines if its station has gone offline (e.g., paragraphs 64-65). It would have been obvious to combine Adams with Carey because Adams discloses an improvement for a system such as Carey of a data router for stations, and teaches the advantage of using a watchdog circuit when a station is busy. Therefore it would have been obvious to one of ordinary skill in the art to combine Adams with Carey at the time the invention was made.

Regarding claims 18 and 37, Carey does not disclose this, but Adams does. Adams discloses that if the station has gone offline that watchdog circuit informs a controller connected to the system (e.g., paragraphs 64-65).

Response to Arguments

3. *Applicant's arguments filed 8/30/2004 have been fully considered but they are not persuasive.*

Regarding claims 1, 19, and 38, Applicant argues that Carey fails to disclose the "dedicated track which [each station] can use to send information to other stations" (p.

10). Applicant quotes Carey as it is cited: "[t]he distributed routing network 4 can be a series of dedicated connections" (col. 2, lines 28-32). The disclosure of "dedicated connections" is quite explicit, and the meaning of "dedicated" as the Applicant notes is quite well known. Carey does not provide additional details of the "dedicated connection", but for the purpose of rejection, and considering the admittedly well-known concept of a dedicated track, this disclosure of Casey is considered adequate to anticipate the claimed dedicated feature. Thus the rejection of claims 1, 19, and 38 is maintained.

Regarding claim 4, Applicant argues that Carey does not disclose a plurality of arbiters, and rather discloses merely a central arbiter (p. 14); however, as stated in a previous Office Action, while the arbitration is centrally located, a closer look at the control logic is necessary to determine whether an arbiter is assigned to each station, particularly in the event of dedicated bus lines. In providing details of the arbiter, Carey discloses: "The arbiter 38 makes an arbitration decision based on each packet of information. The arbiter uses the following information to make the arbitration decision: the initiator making the request; the number of outstanding requests (via input 120) (this is optional); the availability of the target (via input 122); the arbiter makes a decision once per packet; and the arbitration method (defined by input 118)" (col. 13, lines 1-10). From this disclosure it can be determined that if the target is available for arbitration, then arbitration is done; specifically, "an arbiter that evaluates requests from other stations and selects a track on which to receive incoming data" as claimed, is disclosed.

Thus the rejection of claim 4 is maintained.

Regarding claims 15 and 34, Applicant argues that the Examiner's interpretation of the term "component" is overly broad in light of the Applicant's use of the term. In claim 1, the "on-chip components" are recited as "coupled" to the "communication bus" by stations (i.e., "stations that couple a plurality of on-chip components to the on-chip communication bus"), while claim 15 further limits, that more than one component is coupled through one station. What constitutes a component is not recited, which thusly requires a broad interpretation on the part of the Examiner. Components are "coupled"—from this one might reasonably interpret a component as some item that is addressable beyond the addressing of the port itself. To determine whether Carey discloses some equivalent, one is led to consider any specific details of the transmitted communication. In the instant case, one finds Carey discloses: "The first 8 bits A are used by the request transport to identify the target and thus route the packet. The remaining 24 bits B, which are sometimes referred to as the address, are used by the target port to *identify a location within the associated module* or a function of that module. The second 24 bits B are not used by the request transport in order to route the packet" (col. 4, lines 40-49, emphasis added). It seems clear that Carey addresses "components" through or beyond the port. This is deemed to be a reasonable interpretation of the claim language and one anticipated by Carey. Applicant cites from the specification, that "components can be referred to as peripherals"; however, this is consonant with Examiner's reasonably broad interpretation of a peripheral as an addressable entity. If particular aspects from the cited passage are intended to distinguish from Carey, they should be supported by recitation.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clifford H Knoll whose telephone number is 571-272-3636. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



chk

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